

**R1041****Polyclonal Antibody to Collagen type IV - Aff - Purified****Alternate names:**

COL4A1

**Quantity:**

0.1 mg

**Concentration:**

1.0 mg/ml (by UV absorbance at 280 nm)

**Background:**

Collagens are highly conserved throughout evolution and are characterized by an uninterrupted "Glycine-X-Y" triplet repeat that is a necessary part of the triple helical structure. For these reasons it is often extremely difficult to generate antibodies with specificities to collagens. The development of type specific antibodies is dependent on NON-DENATURED three-dimensional epitopes. Collagens were extensively purified for immunization from human and bovine placenta and cartilage by limited pepsin digestion and selective salt precipitation. This preparation results in a native conformation of the protein. Antibodies are isolated from rabbit antiserum and are extensively cross-adsorbed by immunoaffinity purification to produce 'type' specific antibodies. Greatly diminished reactivity and selectivity of these antibodies will result if denaturing and reducing conditions of SDS-PAGE and immunoblotting are used.

**Uniprot ID:**[P02462](#)**NCBI:**[9606](#)**GenElD:**[1282](#)**Host:**

Rabbit

**Immunogen:**Collagen type IV purified from Human and Bovine placenta.  
**Genename:** COL4A1**Format:****State:** Liquid (sterile filtered) purified Ig fraction**Purification:** Immunoaffinity Chromatography**Buffer System:** 0.125M Sodium Borate, 0.075M Sodium Chloride, 0.005M EDTA, pH 8.0**Preservatives:** 0.01% (w/v) Sodium Azide**Stabilizers:** None**Applications:**

Anti-Collagen antibodies have been used for indirect trapping ELISA for quantitation of antigen in serum using a standard curve, for Immunoprecipitation and for native (non-denaturing, non-dissociating) PAGE and Western blotting for highly sensitive qualitative analysis.

**Recommended Dilutions:**

ELISA: 1/5,000-1/50,000.

Western blot: 1/1,000-1/10,000.

Immunoprecipitation: 1/100.

Immunohistochemistry: 1/50-1/200.

**QC:** This product was assayed by Immunoblot and found to be reactive against Collagen IV at a dilution of 1/5,000-1/10,000.

This product was also assayed against 1.0 µg of Collagen IV in a standard sandwich ELISA using Peroxidase conjugated Affinity Purified anti-Rabbit IgG [H&amp;L] (Goat) (Cat.-No R1364HRP) and (ABTS (2,2'-azino-bis-[3-ethylbenthiiazoline-6-sulfonic acid])

as a substrate for 30 minutes at room temperature. A working dilution of 1/4,000-1/8,000 of the stock concentration showed best results. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

**Specificity:**

This product has been prepared by Immunoaffinity Chromatography using immobilized antigens followed by extensive cross-adsorption against other collagens, human serum proteins and non-collagen extracellular matrix proteins to remove any unwanted specificities.

Typically less than 1% cross reactivity against other types of collagens was detected by ELISA against purified standards.

Some class specific anti-collagens may be specific for three-dimensional epitopes which may result in diminished reactivity with denatured collagen or formalin-fixed, paraffin embedded tissues. This antibody reacts with most mammalian Type IV collagens and has negligible cross-reactivity with Type I, II, III, V or VI collagens. Non-specific cross reaction of anti-collagen antibodies with other human serum proteins or non-collagen extracellular matrix proteins is negligible.

**Species:** Human and Bovine.

Other species not tested.

**Storage:**

Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.

For extended storage, mix with an equal volume of glycerol.

Avoid repeated freezing and thawing.

Shelf life: one year from despatch.

**Product Citations:****Purchased from Acris:**

1. Sasse P, Malan D, Fleischmann M, Roell W, Gustafsson E, Bostani T, et al. Perlecan is critical for heart stability. *Cardiovasc Res.* 2008 Dec 1;80(3):435-44. doi: 10.1093/cvr/cvn225. Epub 2008 Aug 10. PubMed PMID: 18694874.
2. Behrens DT, Villone D, Koch M, Brunner G, Sorokin L, Robenek H, et al. The epidermal basement membrane is a composite of separate laminin- or collagen IV-containing networks connected by aggregated perlecan, but not by nidogens. *J Biol Chem.* 2012 May 25;287(22):18700-9. doi: 10.1074/jbc.M111.336073. Epub 2012 Apr 9. PubMed PMID: 22493504.
3. Rodriguez-Teja M, Gronau JH, Breit C, Zhang YZ, Minamidate A, Caley MP, et al. AGE-modified basement membrane cooperates with Endo180 to promote epithelial cell invasiveness and decrease prostate cancer survival. *J Pathol.* 2015 Mar;235(4):581-92. doi: 10.1002/path.4485. Epub 2014 Dec 24. PubMed PMID: 25408555.
4. Rodriguez-Teja, M;Breit, C;Clarke, M;Talar, K;Wang, K;Mohammad, MA;Pickwell, S;Etchandy, G;Stasiuk, GJ;Sturge, J;2016How to Study Basement Membrane Stiffness as a Biophysical Trigger in Prostate Cancer and Other Age-related Pathologies or Metabolic Diseases. *J Vis Exp* 115. PubMed PMID: 27684203.
5. Loch, C;Haeger, J;Pfarrer, C, IFN $\gamma$  mediates chemotaxis, motility, metabolism and CK18 downregulation in bovine trophoblast cells in vitro via STAT1 and MAPK42/44 signaling. *Placenta*

**Pictures:**

R1041 Collagen IV antibody (Lot 25440, 1/400, 45 min RT) showed strong staining in FFPE sections of Human kidney (Left) with strong Red staining observed in glomeruli and liver (Right) with strong staining in sinusoids. Staining for both tissues was consistent with a basement membrane distribution. Slides were steamed in 0.01 M sodium citrate buffer, pH 6.0 at 99-100°C - 20 minutes for antigen retrieval. Images provided courtesy of LifeSpan Biosciences, Seattle, WA

